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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,598	03/30/2001	Weizhong Chen	PN01023AA	9348

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MOTOROLA INC
5401 NORTH BEACH STREET
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FORT WORTH, TX 76137

EXAMINER

LUGO, DAVID B

ART UNIT	PAPER NUMBER
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2637

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

CA

Office Action Summary	Application No. 09/822,598	Applicant(s) CHEN, WEIZHONG	
	Examiner David B. Lugo	Art Unit 2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-13,15-20 and 22-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 and 15-18 is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,12,19,20,22,23 and 29 is/are rejected.
- 7) ☒ Claim(s) 6-11 and 24-28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The indicated allowability of claims 3 and 21 is withdrawn in view of additional consideration of the reference to Mui. Rejections based on the Mui reference follow.

Drawings

2. The drawings (Figs. 1-3) were received on 9/27/04. These drawings are acceptable.

Specification

3. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code (page 5, line 23). Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1, 2, 4, 19, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mui U.S. Patent 6,690,739 (previously cited).
6. Regarding claims 1 and 19, Mui teaches a signal processor in Fig. 25 arranged to recover a sequence of symbols from a received signal comprising a symbol selector (decoder 2514) for selecting a symbol based on the received signal over a time period including previous symbol periods, a current symbol period, and future symbol periods as a function of symbol vectors x, y, and z, where "x" is the vector of symbols associated with past branches, "y" is the vector of symbols associated with the current branch, and "z" is the vector of symbols associated with future branches (col. 39, lines 6-14). Mui also states that the length of the vector "z" which is

related to the number of future symbol periods is based on ISI components (col. 27, lines 59-61). Further, Mui states in column 38, lines 55-57 that the decoder must choose for each of the states a survivor path from the paths converging at that state (see col. 38, line 50 to col. 39, line 3). Thus, this portion of the decoder serves the same function as a trellis processor for providing the symbol selector with one surviving path to each of a plurality of symbol states, the states corresponding one to one to a plurality of symbols, where the surviving path includes a sequence of branches, one for each symbol period, corresponding to a transition from one to another of the plurality of symbol states (see Fig. 26).

7. Mui discloses that the function of the trellis processor and the symbol selector are included in DD-ISIC decoder 2514, but does not explicitly show two separate blocks for performing the respective functions. However, one of ordinary skill in the art would recognize that those functions may be separated into multiple processing blocks without changing the basic function of the decoder. Thus, use of two elements for performing the decoding operation of decoder 2514 is deemed a design consideration that fails to patentably distinguish over Mui.

8. Regarding claims 2 and 20, as shown in Fig. 26, the number of future symbol periods represented by dashed line 2603 is equal to two for a trellis depth of $(k + 2)$ (col. 39, lines 24-30).

9. Regarding claims 4 and 22, the surviving path to each of the states includes a path metric (see col. 33, lines 8-18, col. 39, lines 45-46).

10. Claims 5 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mui in view of Jekal U.S. Patent 6,088,404.

11. Regarding claims 5 and 23, Mui discloses a signal processor as disclosed above, but does not disclose providing the path metric as an adjusted metric.

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12. Jekal discloses adjusting path metrics to minimize memory requirements (col. 25, line 63 to col. 26, line 4).

13. It would have been obvious to one of ordinary skill in the art to provide adjusted path metrics as taught by Jekal in the processor of Mui in order to reduce memory requirements.

14. Claims 12 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mui in view of Mobin U.S. Patent 5,729,558.

15. Regarding claims 12 and 29, Mui discloses a signal processor for recovering a sequence of symbols from a received signal as described above, but does not expressly disclose means for carrier error correction that determines the difference between an expected received signal and the received signal and uses the difference to provide carrier error correction.

16. Mobin discloses an error correction means 150 in Fig. 1 for determining the difference between an expected received signal based on a recovered symbol sequence and the received signal, and uses the difference to provide carrier error correction.

17. It would have been obvious to one of ordinary skill in the art employ the error correction technique of Mobin in the system of Mui to correct for phase errors

Allowable Subject Matter

18. Claims 13 and 15-18 are allowed.

19. Claims 6-11 and 24-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

20. The following is a statement of reasons for the indication of allowable subject matter:

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Mui discloses a signal processor for selecting a symbol based on a time period including previous time periods, a current time period and future time periods, but does not disclose determining a surviving path according to a metric corresponding to a correlation between the received signal and a template for each symbol period or branch of the plurality of paths.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David B. Lugo whose telephone number is 571-272-3043. The examiner can normally be reached on M-F; 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David B. Lugo
1/28/05


KHAI TRAN
PRIMARY EXAMINER